

(19) World Intellectual Property  
Organization  
International Bureau



Rec'd PCT/PTC 24 JAN 2005



(43) International Publication Date  
5 February 2004 (05.02.2004)

PCT

(10) International Publication Number  
**WO 2004/011515 A3**

(51) International Patent Classification<sup>7</sup>: **C08F 283/02**

(21) International Application Number:  
PCT/NL2003/000515

(22) International Filing Date: 14 July 2003 (14.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
02102059.9 25 July 2002 (25.07.2002) EP

(71) Applicant (for all designated States except US): **DSM IP ASSETS B.V.** [NL/NL]; Het Overloon 1, NL-6411 Te Heerlen (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HEISE, Andreas** [DE/DE]; Gangulistrasse 7, D-52538 Gangelt (DE). **PALMANS, Ann, Rita, Alberta** [NL/NL]; Felix Ruttenlaan 139, NL-6132 CW Sittard (NL). **THOMASSEN, Paul, Johannes** [NL/NL]; Brederostraat 149, NL-6531 CE Nijmegen (NL).

(74) Agent: **VERWEIJ, Petronella, Daniëlle**; DSM Intellectual Property, P.O. Box 9, NL-6160 MA Geleen (NL).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
25 March 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS FOR THE PREPARATION OF A BLOCK COPOLYMER

(57) **Abstract:** The invention relates to a process for the preparation of a block copolymer, the process being carried out in the presence of a multifunctional initiator and comprising at least one enzymatically catalyzed homo- or copolymerization reaction and at least one non-enzymatically catalyzed controlled homo- or copolymerization reaction, wherein the non-enzymatically catalyzed controlled homo- or copolymerization reaction is chosen from the group comprising a free radical polymerization reaction, an ionic polymerization reaction, a polycondensation reaction, and a ring opening polymerization (ROP) reaction. The invention also relates to a chiral block copolymer wherein at least one block comprises at least one substituted  $\epsilon$ -caprolactone derivative.



WO 2004/011515 A3